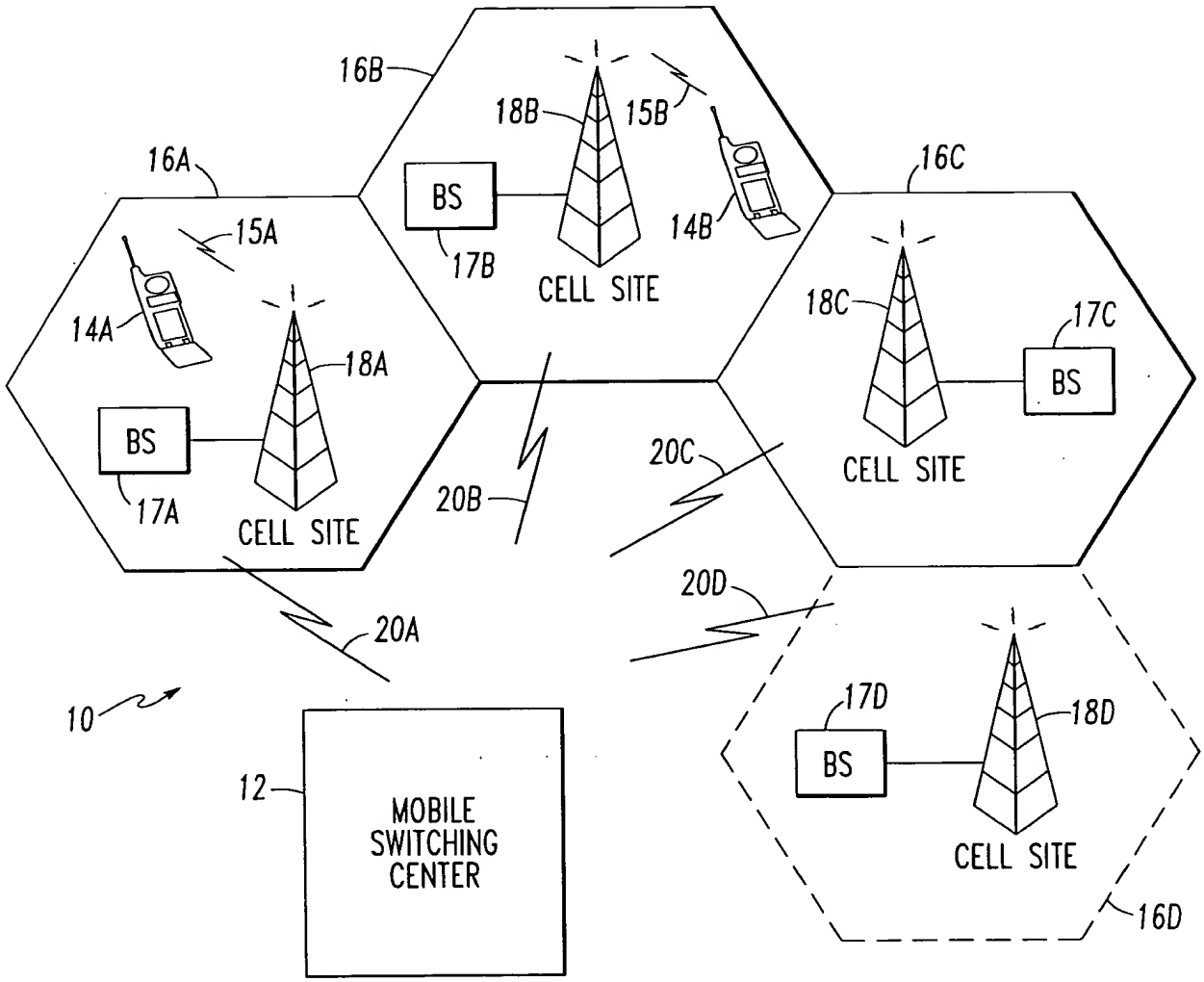

16B
18B
15B
16A
BS
16C
15A
17B
CELL SITE
14B
14A
18C
17C
18A
BS
BS
CELL SITE
20C
20B
17A
CELL SITE
20D
20A
10
17D
18D
12
BS
MOBILE
SWITCHING
CENTER
CELL SITE
16D

FIG. 1

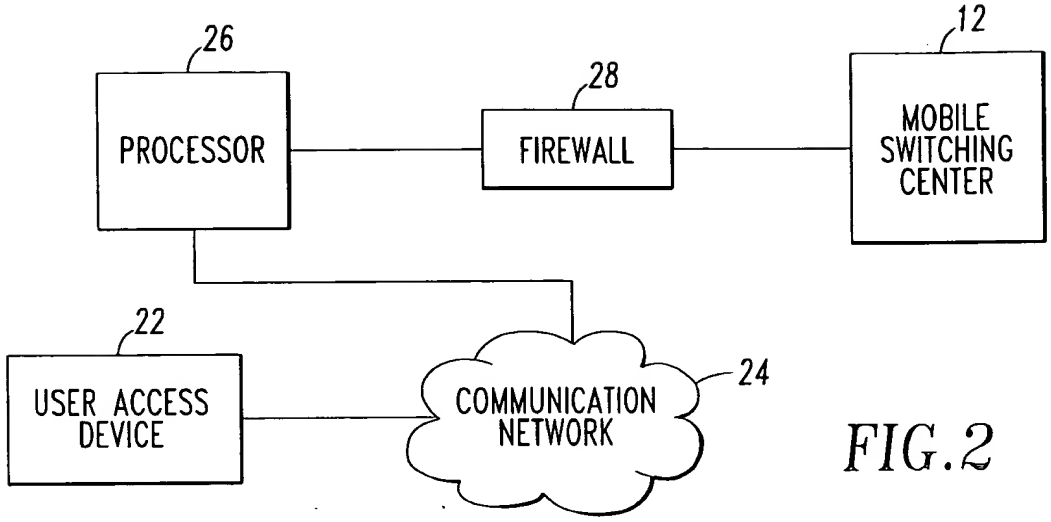

26
PROCESSOR
28
FIREWALL
12
MOBILE SWITCHING CENTER
22
USER ACCESS DEVICE
COMMUNICATION NETWORK
24

FIG.2

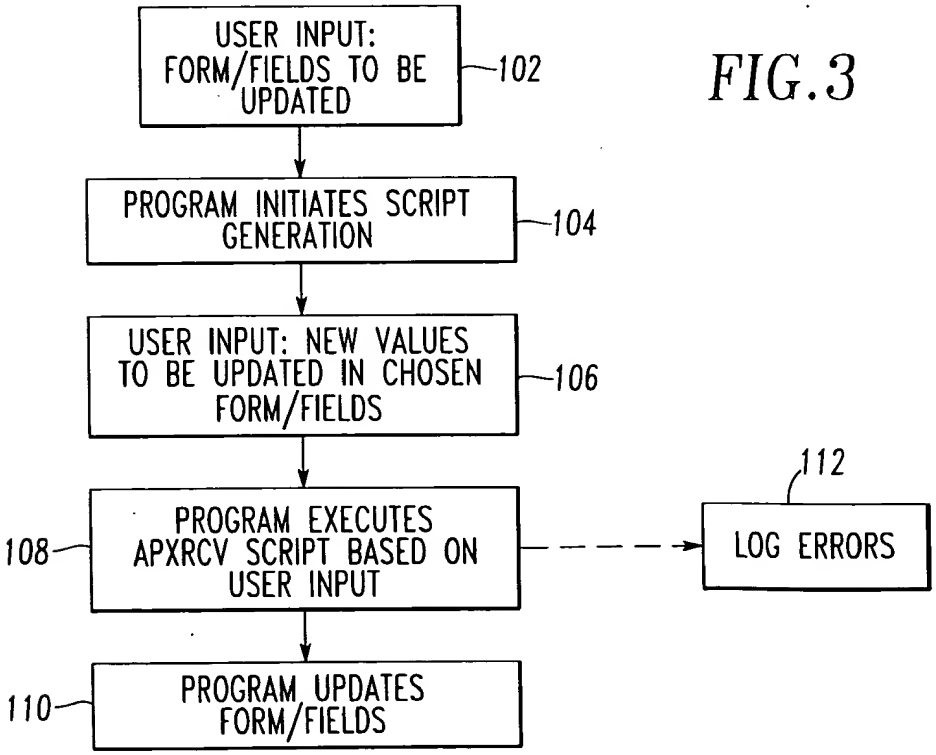

USER INPUT: FORM/FIELDS TO BE UPDATED
102
PROGRAM INITIATES SCRIPT GENERATION
104
USER INPUT: NEW VALUES TO BE UPDATED IN CHOSEN FORM/FIELDS
106
PROGRAM EXECUTES APXRCV SCRIPT BASED ON USER INPUT
108
112
LOG ERRORS
PROGRAM UPDATES FORM/FIELDS
110

FIG.3

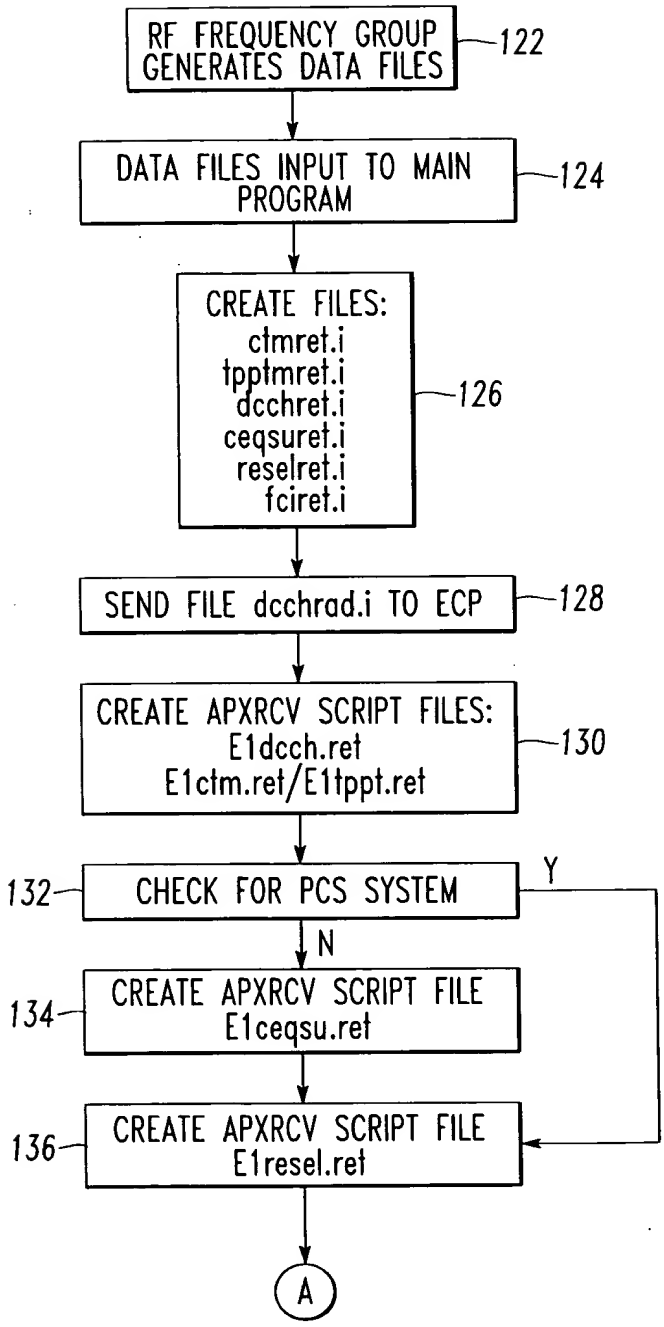

RF FREQUENCY GROUP GENERATES DATA FILES
122
DATA FILES INPUT TO MAIN PROGRAM
124
CREATE FILES:
ctmret.i
tpptmret.i
dcchret.i
ceqsuret.i
reselret.i
fciret.i
126
SEND FILE dcchrad.i TO ECP
128
CREATE APXRCV SCRIPT FILES:
E1dcch.ret
E1ctm.ret/E1tppt.ret
130
132
CHECK FOR PCS SYSTEM
Y
N
134
CREATE APXRCV SCRIPT FILE
E1ceqsu.ret
136
CREATE APXRCV SCRIPT FILE
E1resel.ret
A

FIG.4A

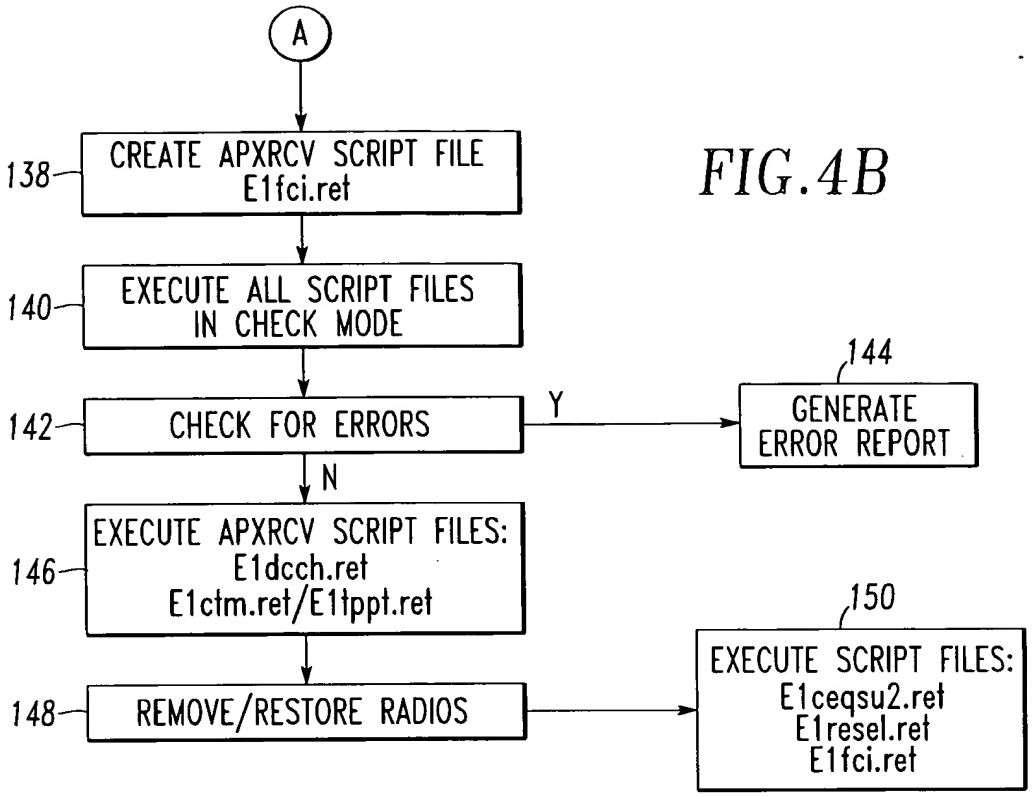

A
138
CREATE APXRCV SCRIPT FILE
E1fci.ret
140
EXECUTE ALL SCRIPT FILES
IN CHECK MODE
142
CHECK FOR ERRORS
Y
144
GENERATE
ERROR REPORT
N
146
EXECUTE APXRCV SCRIPT FILES:
E1dcch.ret
E1ctm.ret/E1tppt.ret
148
REMOVE/RESTORE RADIOS
150
EXECUTE SCRIPT FILES:
E1ceqsu2.ret
E1resel.ret
E1fci.ret

FIG.4B

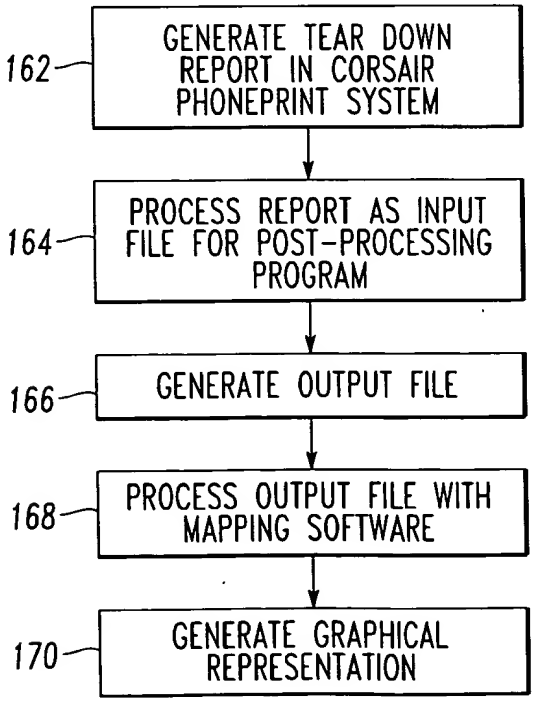

162
GENERATE TEAR DOWN
REPORT IN CORSAIR
PHONEPRINT SYSTEM
164
PROCESS REPORT AS INPUT
FILE FOR POST-PROCESSING
PROGRAM
166
GENERATE OUTPUT FILE
168
PROCESS OUTPUT FILE WITH
MAPPING SOFTWARE
170
GENERATE GRAPHICAL
REPRESENTATION

FIG.5

>pg pp9912.txt

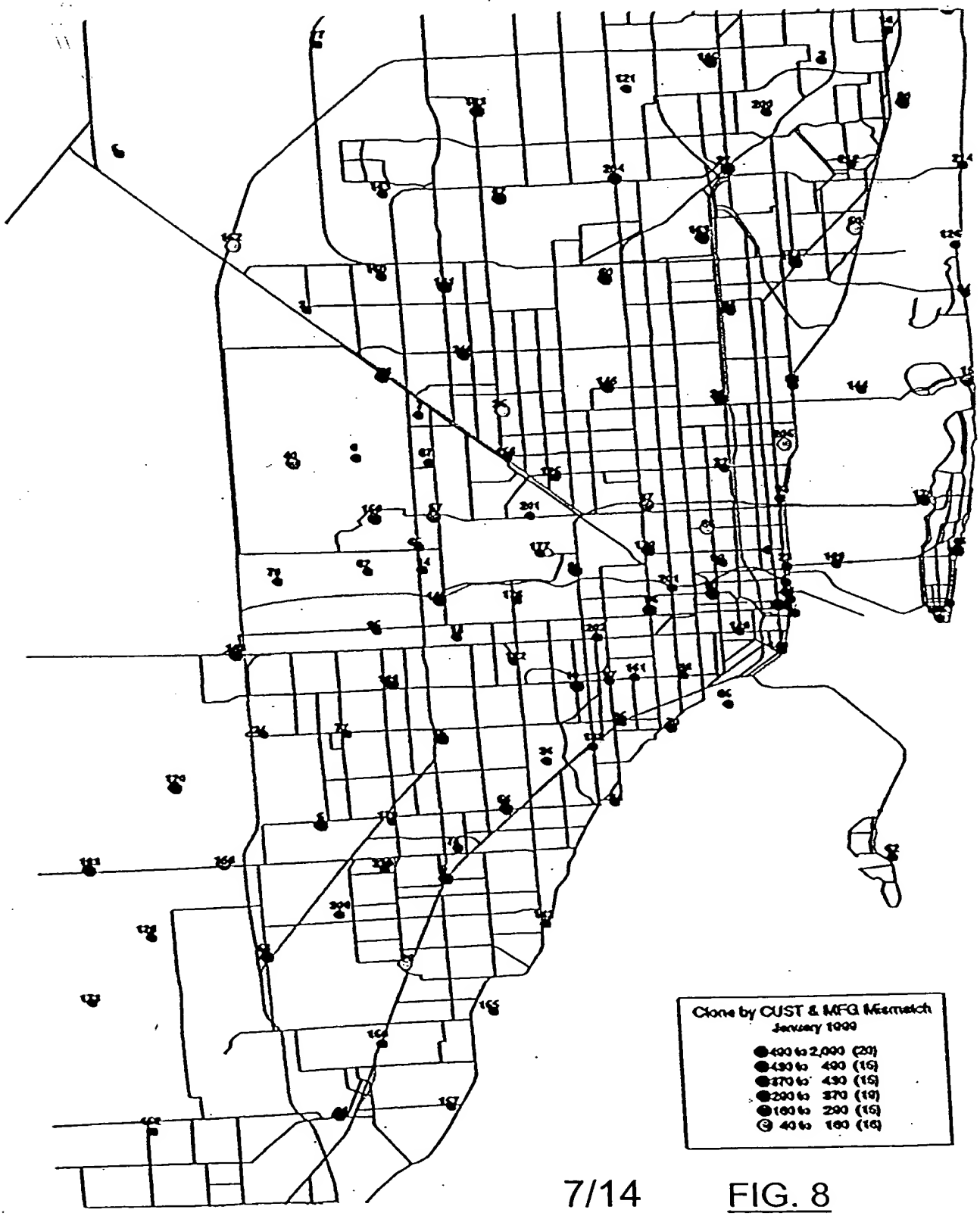
Date	Time(2)	Site_ID	MIN(1)	Dialed_Digits	Tear-Down_Reason	
12/25/99	19:26:09	20	2012075854	12014981322	MFG	
12/23/99	14:56:20	219	2012075854	5617767114	MFG	
12/26/99	21:40:32	167	2012130072	19547814445	MFG	
12/23/99	19:06:49	82	2012134416	9544289147	MFG	
12/23/99	19:06:23	82	2012134416	9544289147	MFG	
12/25/99	17:23:55	82	2012134416	9544285083	MFG	
12/25/99	15:06:20	82	2012134416	2015680907	MFG	
12/25/99	13:04:16	82	2012134416	2015680907	MFG	
12/25/99	13:04:05	82	2012134416	2015680907	MFG	
12/25/99	13:03:53	82	2012134416	2015680907	MFG	
12/25/99	13:03:31	82	2012134416	2015680907	MFG	
12/25/99	13:01:49	82	2012134416	2015680907	MFG	
12/25/99	12:53:38	82	2012134416	2015680907	MFG	
12/25/99	12:52:32	82	2012134416	2015680907	MFG	
12/25/99	12:52:03	82	2012134416	2015680907	MFG	
12/25/99	12:50:48	82	2012134416	2015680907	MFG	
12/25/99	12:48:15	82	2012134416	2015680907	MFG	
12/25/99	12:47:16	82	2012134416	5680907 MFG		
12/24/99	11:58:50	82	2012134416	8003328463	MFG	
12/24/99	11:58:08	82	2012134416	8003328463	MFG	
12/24/99	10:03:16	82	2012134416	9544289147	MFG	
12/22/99	14:58:09	80	2012300764	19546467166	MFG	
12/29/99	10:54:28	177	2012499657	19086881800	MFG	
12/29/99	10:51:49	177	2012499657	9412503698	MFG	
12/29/99	10:25:04	145	2012499657	12012400657	MFG	
12/29/99	10:24:42	145	2012499657	12012400657	MFG	
12/27/99	21:26:01	49	2012476225	15616551115	MFG	
12/24/99	19:22:48	219	2012476225	15615551212	MFG	
12/24/99	19:22:26	219	2012476225	15615551212	MFG	
12/24/99	19:22:06	219	2012476225	15615551212	MFG	
12/24/99	19:13:38	219	2012476225	5617950022	MFG	
12/27/99	12:01:06	20	2012476225	15614996976	MFG	
12/23/99	16:23:47	12	2012640686	3105152822	MFG	
12/23/99	16:17:19	12	2012640686	3105152822	MFG	
12/23/99	16:17:03	12	2012640686	3105152822	MFG	

FIG.6

```
>pg map1299
ECP, CellNo,Longitude, Latitude,Count
4,1,-80.1675,26.155278.148
3,5,-80.361111,25.699444,209
1,6,-80.171667,26.36,675
1,7,-80.144167,26.562778,173
1,8,-80.109722,26.760556,76
3,9,-80.317222,25.679444,311
3,10,-80.266667,25.747222,115
4,15,-80.123056,25.854167,510
4,16,-80.198611,26.248889,401
1,18,-80.088889,26.45,380
1,20,-80.058611,26.651944,216
4,22,-80.210833,25.848611,138
4,23,-80.128889,26.085833,844
4,25,-80.288889,25.845556,55
1,26,-80.201111,26.630833,251
4,27,-80.204722,25.93,590
3,38,-80.360833,25.596667,255
3,39,-80.333889,25.649444,584
4,30,-80.415,26.086389,207
4,31,-80.175833,26.121944,128
1,37,-80.681389,26.686667,213
4,40,-80.364444,25.828333,156
4,42,-80.286944,25.920556,147
4,43,-80.168056,26.024722,333
3,46,-80.129167,25.793611,2694
3,47,-80.238611,25.811389,121
1,49,-80.051667,26.711944,381
4,50,-80.160556,25.908611,187
4,52,-80.26,26.121667,456
4,53,-80.105556,26.136389,501
3,54,-80.383333,25.653056,81
4,55,-80.249444,26.268333,314
3,56,-80.294722,25.703889,184
3,57,-80.315,25.808333.21
3,58,-80.265278,25.788333,267
4,60,-80.25,25.891667,205
4,61,-80.090833,26.230278,147
4,64,-80.211667,26.0175,595
```

FIG.7

Patent Application Publication Oct. 4, 2005 Sheet 6 of 14 US 2005/0221810 A1


Clone by CUST & MFG Mismatch
January 1999
400 to 2,000 (20)
430 to 400 (15)
370 to 430 (15)
200 to 370 (15)
100 to 200 (15)
40 to 100 (15)

7/14 FIG. 8

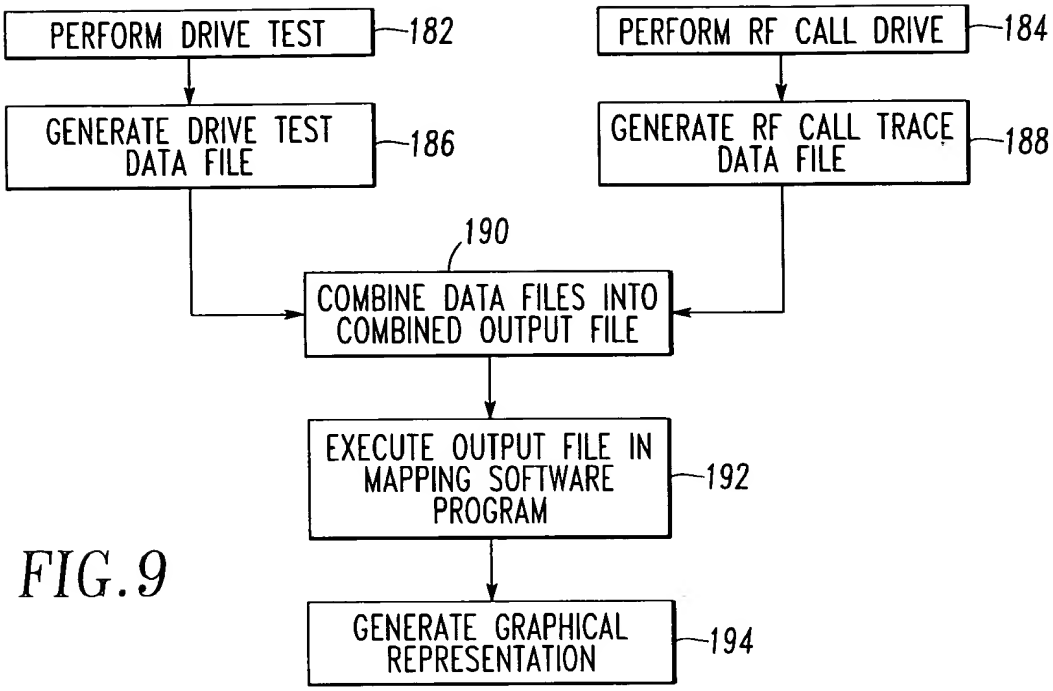


FIG.9

FIG.11B

```
ER,RBER,FER,BQ,TD,FREQ,TIME,MS,PRINT
DEV,FVC,RVC,TDRVC,FVC,RVC,RVC,RVC,RVC,RVC,ERR,ALIG

28.0069725,9412580201,T017C,MDVC-
15,0,1,0,2,0
28.0069725,9412580201,T017C,MDVC-
15,0,1,0,2,0
28.0069856,9412580201,T017C,MDVC-
15,0,2,0,2,1
28.0069856,9412580201,T017C,MDVC-
15,0,2,0,2,1
28.0070392,9412580201,T005B,MDVC-
2,0,4,0,2,1
28.0072014,9412580201,T005B,MDVC-
7,0,4,0,2,1
28.0072014,9412580201,T005B,MDVC-
7,0,4,0,2,1
28.0073900,9412580201,T005B,MDVC-
8,0,3,0,2,1
28.0073900,9412580201,T005B,MDVC-
8,0,3,0,2,1
28.0075761,9412580201,T005B,MDVC-
7,0,5,0,2,1
28.0075761,9412580201,T005B,MDVC-
7,0,5,0,2,1
592,9412580102,T005B
```

MOBILE TELEPHONE CELL TRAFFIC RECORDING
DIGITAL SIGNAL STRENGTH MEASURMENTS

MSNB	CELL	DEV	SSFVC	SSRVC
9412580201	T017C	MDVC-1060	23	20

SSSTDRVC	BERFVC	BERRVC	RBERRVC	FERRVC
6	3	2	2	0

BQRVC	TDRVC	FREQERR	TIMEALIGN	MSPOW
6	3	1	0	2

NCELL	NSSFFMC	MEASCHAN	VIND
T017A	5	1260	Y
T017B	23	1272	Y
T006B	17	1300	Y
T016B	13	1305	Y
T004A	29	1251	Y
T005B	33	1302	Y
T005A	23	1290	Y
T018A	21	1294	Y
T154B	21	1303	Y

TIMW	PRINTIND	FCODE
11:08:27	0	

END

MOBILE TELEPHONE CELL TRAFFIC RECORDING CANDIDATE LIST FOR HANDOFF

MSNB	CELL	TIME	FCODE	URGENCY
9412580201	T017C	11:08:28		0

CANDCELL	CELLTYPE	NTYPE	RATING
T005B	0	STD	0

END

FIG.10

XTEL LOG FILE

DATE,TIME,LONGITUDE,LATITUDE,ALT,SPEED,HEADING,DPS_MODE,PHONE_TASK,TASK_DESC,CHAN,RSSI,MODTYPE,SLOT,CHANTYPE,SAT,DVCC,POWER,BER,BER_CODE,SBI,TA,CELL1.DISTANCE1,CELL2,DISTANCE2,CELL3,DISTANCE3,LOWER_CTOA,UPPER_CTOA,COCHA_RSSI,MARKER,CHAN_GRP,EVENT,EVINFO,BAND,LISTTYPE,LISTCT,CHAN1,RSSI1,CHAN2,RSSI2,CHAN3,RSSI3,CHAN4,RSSI4,CHAN5,RSSI5,CHAN6,RSSI6,CHAN7,RSSI7,CHAN8,RSSI8,CHAN9,RSSI9,CHAN10,RSSI10,CHAN11,RSSI11,CHAN12,RSSI12,CHAN13,RSSI13,CHAN14,RSSI14,CHAN15,RSSI15,CHAN16,RSSI16,CHAN17,RSSI17,CHAN18,RSSI18,CHAN19,RSSI19,CHAN20,RSSI20,CHAN21,RSSI21,CHAN22,RSSI22,CHAN23,RSSI23,CHAN24,RSSI24,CHAN25,RSSI25,REVISION
7/30/99,11:08:27,-
82.3321883,27.9813839,9,40.3,86.9,G8,5,Conversation,1218,-
93,D,3,V,3,5,2,0.87,3,0,0,,,,,,,14,15,-100,0,8,,,1,Neig,9,1284,-
89,1302,-93,1300,-103,1255,-107,1317,-109,1303,-109,1314,-111,1305,-
111,1315,-
113,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,4
7/30/99,10:52:47,-
82.3321883,27.9813839,9,40.3,86.9,G8,5,Conversation,1218,-
93,D,3,V,3,5,2,0.84,3,0,0,,,,,,,14,15,-100,0,8,,,1,Neig,9,1284-
89,1302,-93,1300,-103,1303,-107,1255,-109,1314,-111,1317,-111,1305,-
111,1315,-
113,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,4
7/30/99,10:52:48,-
82.33219553,27.9813947,10,43.1,,87.0,G8,5,Conversation,1218,-
93,D,3,V,3,5,2,0.84,3,0,0,,,,,,,-10,38,-137,0,8,,,1,Neig,9,1284-
89,1302,-93,1300,-103,1303,-107,1255,-109,1314,-111,1317,-111,1305,-
111,1315,-
113,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,4
7/30/99,10:52:48,-
82.3319553,27.9813947,10,43.1,87.0,G8,5,Conversation,1218,-
95,D,3,V,3,5,2,0.84,3,0,0,,,,,,,-10,38,-137,0,8,,,1,Neig,9,1284-
83,1302,-93,1300,-101,1303,-105,1255,-109,1305,-111,1314,-113,1315,-
113,1317,-
113,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,4
7/30/99,10:52:49,-
82.3317164,27.9814044,10,44.7,87.2,G8,5,Conversation,1218,-
95,D,3,V,3,5,2,0.99,3,0,0,,,,,,,-10,38,-137,0,8,,,1,Neig,9,1284-
83,1302,-93,1300,-101,1303,-105,1255,-109,1305,-111,1314,-113,1315,-
111,1317,-
113,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,4

FIG. 11A

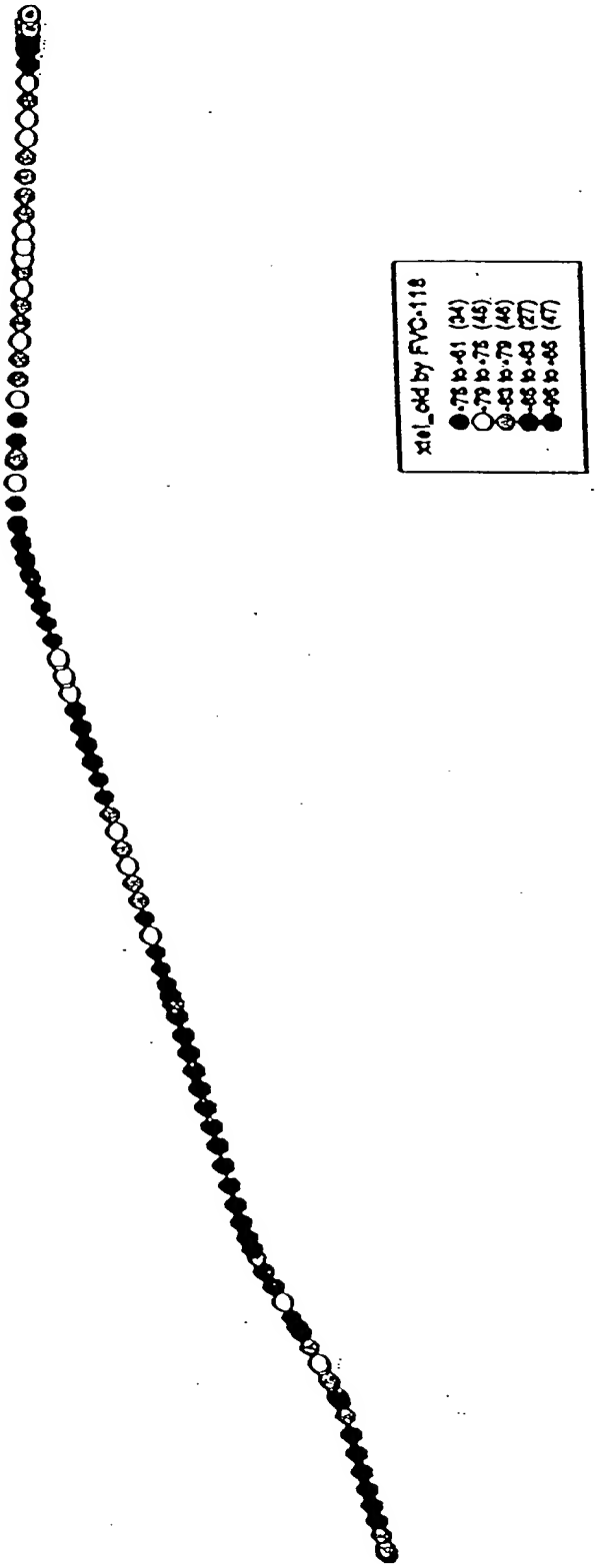


FIG. 12

COMARCO FILE

13:20:00.8,26.677,-81.567
12:20:01.2,25.230,-81.456
.....
.....
.....
13.21.00.3,28.655,-81.2128

FIG. 13A

Time,Long,Lat,CellNo,SS,
12:41:29,28,6559300,-18.205792000,1353,-124
12:41:29,28,6559300,-18.205792000,201,-106
12:41:29,28,6559300,-18.205792000,32,-106
12:41:29,28,6559300,-18.205792000,321,-76
12:41:29,28,6559300,-18.205792000,323,-66
12:41:29,28,6559300,-18.205792000,831,-100
12:41:30,28,6559260,-18.205580000,323,-66
12:41:31,28,6559170,-18.205380000,321,-75
12:41:31,28,6559170,-18.205380000,321,-75
12:41:31,28,6559170,-18.205380000,323,-64
12:41:32,28,6559080,-18.205198000,323,-63
12:41:33,28,6558950,-18.204922000,321,-73
12:41:33,28,6558950,-18.204922000,323,-62
12:41:34,28,6558900,-18.204769000,321,-73
12:41:34,28,6558900,-18.204769000,321,-73
12:41:34,28,6558900,-18.204769000,322,-98
12:41:34,28,6558900,-18.204769000,323,-61
12:41:35,28,6558900,-18.204577000,1353,-124
12:41:35,28,6558900,-18.204577000,201,-105
12:41:35,28,6558900,-18.204577000,202,-106
12:41:35,28,6558900,-18.204577000,32,-105
12:41:35,28,6558900,-18.204577000,323,-63
12:41:35,28,6558900,-18.204577000,831,-99
12:41:37,28,6558970,-18.204219000,321,-73
12:41:37,28,6558970,-18.204219000,323,-67
12:41:38,28,6559000,-18.204044000,321,-74
12:41:38,28,6559000,-18.204044000,323,-67
12:41:38,28,6559000,-18.204044000,321,-74
12:41:38,28,6559000,-18.204044000,323,-67
12:41:40,28,6559020,-18.203683000,1353,-122
12:41:40,28,6559020,-18.203683000,202,-104
12:41:40,28,6559020,-18.203683000,32,-105
12:41:40,28,6559020,-18.203683000,321,-73
12:41:40,28,6559020,-18.203683000,322,-96
12:41:40,28,6559020,-18.203683000,323,-67
12:41:41,28,6559070,-18.203457000,321,-72
12:41:41,28,6559070,-18.203457000,323,-66
12:41:42,28,6559100,-18.203125000,321,-71
12:41:42,28,6559100,-18.203125000,323,-66

FIG. 13B

```
v- - - - - - - - - - - - - - - - - - Record #      1: - - - - - - - - - - - - - - - - - v
05/10/99 13:22:05 ALM INF  4103  7 32          G        TC    457
                Call Monitor: Call Record has been Written in RAM disk
                Ph#:(407)9223002 Call clear by MS - mobile clear
v- - - - - - - - - - - - - - - - - - Record #      2: - - - - - - - - - - - - - - - - - v
05/10/99 13:22:04 ALM INF  4113  7 32          G        TC    457
                Call Monitor: Call RSSI value
                (407)9223002 cell 323 rrssi -77 attn 4 snr 40
v- - - - - - - - - - - - - - - - - - Record #      3: - - - - - - - - - - - - - - - - - v
05/10/99 13:22:04 ALM INF  4117  7 32          G        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/323 / -73
v- - - - - - - - - - - - - - - - - - Record #    264: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4117  7 20          A        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/201 / -98
v- - - - - - - - - - - - - - - - - - Record #    265: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4117  7 32          B        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/322 / -103
v- - - - - - - - - - - - - - - - - - Record #    266: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4117  7 83          A        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/861 / -96
v- - - - - - - - - - - - - - - - - - Record #    267: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4117  7 32          A        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/321 / -78
v- - - - - - - - - - - - - - - - - - Record #    268: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4117  7 135         G        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/1353 / -113
v- - - - - - - - - - - - - - - - - - Record #    269: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4117  7 20          B        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/302 / -100
v- - - - - - - - - - - - - - - - - - Record #    270: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4113  7 32          G        TC    457
                Call Monitor: Call RSSI value
                (407)9223002 cell 323 rrssi -72 attn 4 snr 40
v- - - - - - - - - - - - - - - - - - Record #    271: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4117  7 32          G        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/323 / -71
v- - - - - - - - - - - - - - - - - - Record #    272: - - - - - - - - - - - - - - - - - v
05/10/99 13:21:00 ALM INF  4117  7 3           B        SRC
                Call Monitor: Adj. cell RSSI values from Scanning Rcvr.
                (407)9223002 Cell_id RSSI:/32 / -115
```

FIG. 14

09/504,810

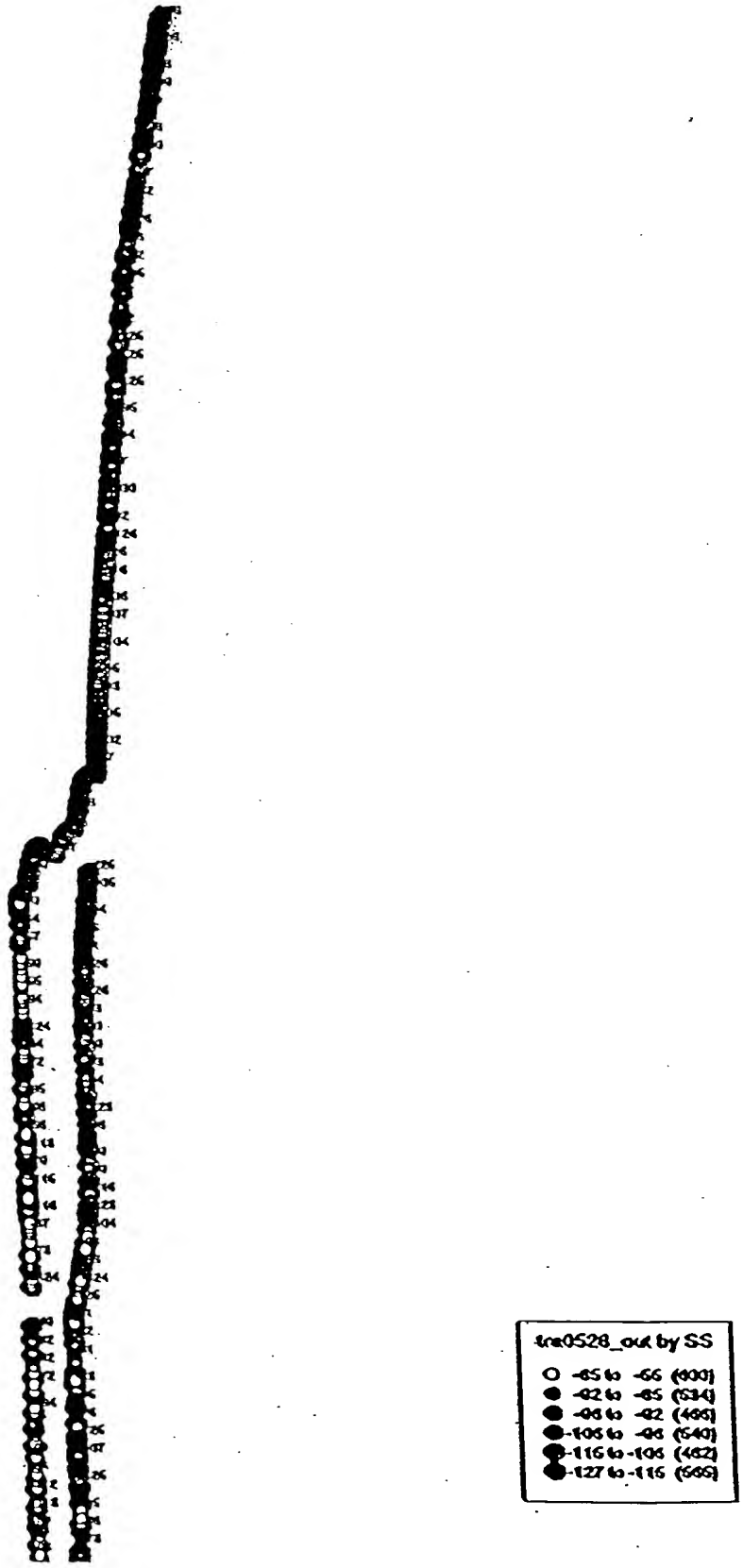

tra0528_out by SS
-65 to -66 (600)
-82 to -65 (534)
-96 to -82 (466)
-105 to -96 (540)
-116 to -105 (462)
-127 to -116 (595)

FIG. 15